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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,545

04/27/2006

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YAN-40

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20311 7590 08/22/2008

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EXAMINER

SAVAGE, MATTHEW O

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

08/22/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/595,545	<b>Applicant(s)</b> SAITO, YASUHIRO	
	<b>Examiner</b> Matthew O. Savage	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11-28-06, 7-24-06</u>   | 6) <input type="checkbox"/> Other: _____                          |

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The disclosure is objected to because of the following informalities:

On line 6 of page 14, "85" should be changed to --86--.

Appropriate correction is required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9, 11, 14, 15, 16, 20, 22, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

On line 2 of claim 9, "the upper tip" lacks antecedent basis.

On line 5 of claim 11, "the protrusion" lacks antecedent basis.

Concerning line 5 of claim 15, it is unclear as to whether "a spring" is the same as that mentioned on the last line of claim 8.

Claim 16 is considered redundant of claim 15.

Claim 20 is considered redundant of claim 12.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 10, 12, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagaoka in view of Davis.

With respect to claim 7, Nagaoka discloses a filtration device including a filtration tank 1 (see FIG. 1), having a filter bed 3 for supporting a layer of particulate filtration media; a vertically oriented hollow cleansing tank 2 having an opening 2A at the lower end thereof, provided in the filtration tank; a screw conveyor 8, for conveying the filtration media upwards within the cleansing tank while cleansing the filtration media; and a contaminant expulsion mechanism 10, for expelling contaminants separated from the filtration media during cleansing to the exterior of the filtration tank; wherein: the screw conveyor has a shaft, which is suspended within the filtration tank from above (e.g., from drive motor 7); the upper portion of the shaft is driven (e.g., via motor 7), and the lower portion of the shaft is supported by a support section (e.g., the bearing mounted to the bottom of the tank), which is fixed to the lower portion of the cleansing tank (e.g., via the tank 1). Nagaoka fails to specify an axial support section and a frictional wear compensating mechanism is provided at a portion of the axial support section where the shaft and the axial support section contact each other. Davis discloses that is known to provide an axial support bearing that will compensate for frictional wear since the force of gravity will permit the axial clearance between the bearing surfaces to be removed. Davis suggest that such an arrangement is simple and economical to fabricate. It would have been obvious to have modified the apparatus of Nagaoka so as to have included the axial support section and mechanism for

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compensating for frictional wear as suggested by Davis in order to provide an axial support bearing that was simple and economical to fabricate.

Regarding claim 10, Nagaoka discloses the cleaning tank 2 as being suspended within the filtration tank from above and the axial support section as being mounted to the lower end of the cleansing tank (e.g., via the tank 1).

With respect to claims 12, 19, and 20, Nagaoka and Davis fail to specify active carbon, however, such a media is well known and would have been obviously selected in order to remove organic contaminants from water.

Claims 8, 9, 11, 13-18, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagaoka in view of Davis as applied to claim 7 above, and further in view of Kazuo.

With respect to claim 8, Davis discloses a recess in the lower end of the shaft g and a protrusion h for engaging the recess but fails to specify a spring for urging the the protrusion toward the shaft. Kazuo discloses an analogous support that includes a spring 46 for urging a protrusion 41 toward a shaft 24 (see FIG. 1) and teaches that such an arrangement improves the radial stability of the shaft. It would have been obvious to have modified the combination suggested by Nagaoka and Davis so as to have included the spring as suggested by Kazuo in order to improve the radial stability of the shaft.

Concerning claim 9, Davis and Kazuo disclose the upper tip as being conical in shape, the recess being formed to be complementary to the conical shape of the

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protrusion, and Kazuo discloses a cutout at the tip of the protrusion and a further recess in the center of the recess.

With respect to claim 11, Nagaoka discloses a support mounted about the periphery of the lower end of the cleansing tank. Nagaoka and Davis fail to specify the ring, spring, and central portion. Kazuo discloses an analogous support including a ring 36, a spring 46, a central portion 38, and a plurality of link rods 37 and teaches that such an arrangement improves the radial stability of the shaft. It would have been obvious to have modified the combination suggested by Nagaoka and Davis so as to have included the spring as suggested by Kazuo in order to improve the radial stability of the shaft.

Regarding claims 13, 14, Nagaoka discloses the cleaning tank 2 as being suspended within the filtration tank from above and the axial support section as being mounted to the lower end of the cleansing tank (e.g., via the tank 1).

Concerning claims 15 and 16, Nagaoka discloses a support mounted about the periphery of the lower end of the cleansing tank and Kazuo discloses a ring 36, a spring 46, a central portion 38, and a plurality of link rods 37.

With respect to claims 17, 18, and 21-24, Nagaoka and Davis fail to specify active carbon, however, such a media is well known and would have been obviously selected in order to remove organic contaminants from water.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O. Savage whose telephone number is (571) 272-1146. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew O Savage/  
Primary Examiner  
Art Unit 1797

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